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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,127	06/26/2003	Jin-Tae Kim	053785-5117	3643
26633	7590	11/16/2005	EXAMINER	
HELLER EHRMAN WHITE & MCAULIFFE LLP 1717 RHODE ISLAND AVE, NW WASHINGTON, DC 20036-3001			WANG, GEORGE Y	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/606,127

Applicant(s)

KIM ET AL.

Examiner

George Y. Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 1,7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 23, 2005 has been entered.

### ***Claim Objections***

2. Claim 1 is objected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the new limitation "that *both sides* of the neck region are disposed within the boundaries of the drain electrode" (italics inserted for emphasis). It is uncertain sides of the neck constitute "both sides" since nothing in the claims or the specification is the neck region defined as having such. Furthermore, nothing in the claims or the specification discloses the meaning of "disposed within boundaries." Appropriate correction is required.

Note: For the purposes of examination, Examiner assumes that "both sides" refers to the left and right sides of the neck region when viewed from the perspective as

shown in Fig. 7 and that "disposed within boundaries" means that the area of neck region is within the area of the drain electrode that directly covers it.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-6 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kwon et al. (U.S. Patent No. 6,671,010, hereinafter "Kwon").

5. As to claim 1, Kwon discloses a liquid crystal display (LCD) device having an array substrate comprising a substrate (fig. 6j, ref. 100), a gate line (fig. 6i, ref. 102) and data line (fig. 6i, ref. 120) on the substrate that cross each other to define a pixel area

(fig. 6e, ref. P), a thin film transistor (TFT) (fig. 6i, ref. T) electrically connected to the gate and data lines and including a gate electrode (fig. 6j, ref. 101), a source electrode (fig. 6j, ref. 112) over the gate electrode and connected to the data line, a drain electrode (fig. 6j, ref. 114) spaced apart (fig. 6i, ref. CH) from the source electrode, and a semiconductor layer (fig. 6f, ref. 116) having an active layer over the gate electrode, a first extended portion, and a neck region connecting the active layer and the first extended portion, wherein the neck region is completely covered with the drain electrode such that both sides of the neck region are disposed within boundaries of the drain electrode (see Response to Arguments), and a pixel electrode (fig. 6j, ref. 117) in the pixel region and connected (fig. 6j, ref. 119) to the drain electrode.

6. Regarding claims 2-3, Kwon discloses the LCD as recited above where the source electrode has a U-shape (fig. 6i, ref. 112; col. 6, lines 55-59) and surrounds a part of the drain electrode (fig. 6i, ref. 114a), which has a rod shape.

7. As per claim 4, Kwon discloses the LCD as recited above further comprising a second extended portion (fig. 6e, ref. 116a) corresponding to the data line (fig. 6e, ref. 120) in the semiconductor layer.

8. As to claims 5 and 9-10, Kwon discloses the LCD as recited above further comprising a doped semiconductor layer (fig. 6f, ref. 118) between the semiconductor layer (fig. 6f, ref. 116) and the source electrode (fig. 6f, ref. 112) and between the

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semiconductor layer (fig. 6f, ref. 116) and the drain electrode (fig. 6f, ref. 114a) in the TFT and where the semiconductor layer is formed of amorphous silicon and the doped semiconductor layer is formed of doped amorphous silicon (col. 9, lines 38-42).

9. Regarding claim 6, Kwon discloses the LCD as recited above where the first extended portion at the boundary with the active layer has a width narrower than the active layer (fig. 6i, ref. M).

#### ***Allowable Subject Matter***

10. Claims 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

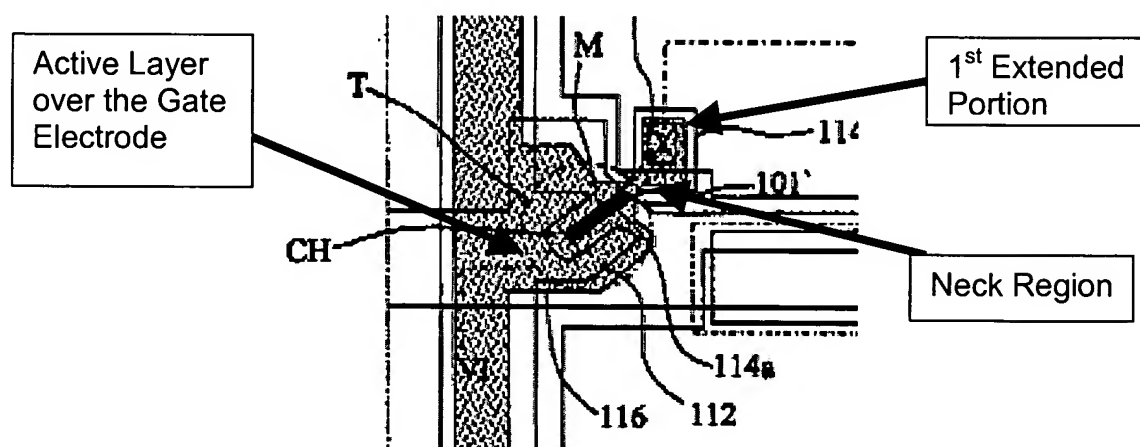
The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to specifically disclose an LCD device particularly having a first extended portion where the width at the boundary with the active layer is in the range of about 2.8  $\mu\text{m}$  to about 3.4  $\mu\text{m}$  and where the drain electrode completely covering the first extended portion at the boundary with the active layer has a width in a range of about 4.5  $\mu\text{m}$  to about 5.6  $\mu\text{m}$ .

#### ***Response to Arguments***

11. Applicant's arguments filed January 3, 2005 have been fully considered but they are not persuasive.

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Applicant's only argument is that the primary Kwon reference does not teach the claimed feature of "the neck region is completely covered with the drain electrode such that both sides of the neck region are disposed within boundaries of the drain electrode." Applicant's only support for this argument is the mere assertion that "a left side of the active layer 116 in Fig. 16 of Kwon is disposed outside of the drain electrode 114." However, it is noted that nowhere Applicant's assertion that the active layer is "outside" of the drain electrode shown. In fact, the Kwon reference clearly teaches a semiconductor layer (fig. 6f, ref. 116) having an active layer (fig. 6i, see arrow) over the gate electrode, a first extended portion (fig. 6i, see arrow), and a neck region (fig. 6i, see arrow) connecting the active layer and the first extended portion, wherein the neck region is completely covered with the drain electrode such that both sides of the neck region are disposed within boundaries of the drain electrode (fig. 6i, see dotted circled area).



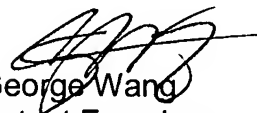
As a result, Applicant's amendment and arguments do not place the application in condition for allowance.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
George Wang  
Patent Examiner  
AU 2871  
November 9, 2005